

Claims:

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. A window frame for receiving a glazing unit, said frame being a one
5 piece molded member molded to incorporate formations to receive members to be used for securing a glazing unit therein.
2. A window frame as claimed in claim 1 in which said formations include recesses.
3. A window frame as claimed in claim 2 for receiving a glazing unit in the
10 form of a swingable sash, said frame having interior formations for mounting hinge members for swingably supporting a sash and said recesses comprising recesses for receiving and locating members for use in locking a swingable sash when hinged to said frame.
4. A window frame as claimed in claim 2 in which said recesses include a
15 plurality of slots around the inner perimeter of said frame, said slots being formed to receive locking members for locking a glazing unit in said frame.
5. A window frame as claimed in claim 4 in which said frame is rectangular in combination with a glazing unit received within said frame, and a locking bar for each side of said frame, each said locking bar having a
20 series of barbs for lockingly engaging in said slots.
6. A window frame as claimed in claim 5 in which said frame has a peripheral groove formed therein and said locking bars are formed with tongues engaging in said peripheral groove.
7. The combination of an integrally molded casement window frame and a
25 mating integrally molded sash frame for assembly into a casement window, said window frame being molded to provide hardware mounting areas for attaching hardware to be used in the assembly of said sash frame with said

window frame for swinging movement of said sash frame relative to said window frame.

8. The combination of claim 7 with hardware adapted to be mounted on said hardware mounting areas in the assembly of said window and sash frames into a casement window.

9. The combination of claims 7 and 8 in which said window frame is formed with said hardware mounting areas for selectively attaching hardware for swinging movement of said sash frame to swing open to the left or to the right.

10. A combination as claimed in claim 7 in which said window frame has sill and header transverse rails joined by jamb rails, one of said sill or header rails being formed to provide a mounting area for a sash swinging control mechanism located centrally thereof.

11. The combination as claimed in claim 10 in which each of said jambs is formed with mounting areas for mounting hinges for hinging said sash frame from a selected one of said jambs to provide for an egress opening substantially equal to the open area of said window frame.

12. A combination as claimed in claim 10 or 11 in which each of said jamb rails has a plurality of non circular recesses therein at predetermined locations to receive studs of a locking bar system.

13. The combination as claimed in claim 10 in which each of said jamb rails has a locking bar operator slot provided therethrough adjacent the lower end thereof.

14. The combination of an injection molded casement window frame comprising an integral sill rail, a pair of jamb rails and a header rail and a mating molded sash frame for assembly with said window frame, said jamb rails each being formed to provide hinge mounting areas for selectively hinging said sash frame from each jamb rail and to provide a locking bar

support surface for supporting therefrom a locking bar to be located on the jamb opposite to the jamb to which the sash frame is to be hinged, and said sill rail is formed with a central window control operator mounting formation and said jamb rails are provided with locking bar control mounting formations
5 adjacent the lower ends thereof.

15. The combination as claimed in claim 15 in which said sash frame is formed with a glazing unit retaining perimeter wall having a series of spaced inwardly projecting ribs, a glazing unit mounted in said sash frame and supported from said ribs with resilient blocks interposed between said ribs and
10 the periphery of said glazing unit.

16. The combination as claimed in claim 15 provided with locking means for locking said glazing unit in said sash frame.

17. The combination as claimed in claim 14, 15 or 16 together with hinges for hinging said sash frame to said window frame, a sash swinging control
15 mechanism for mounting on said window frame, means for connecting said control mechanism to said sash frame for hinging movement of said sash in response to said control mechanism, and a locking mechanism comprising a locking bar for mounting on one of said window frames and a control mechanism for said locking bar for mounting on said window frame.

20 18. A casement window comprising:

(a) an injection molded window frame having a header and sill connected by jambs;

(b) a mating injection molded sash frame having a glazing panel retained therein;

25 (c) hinge connections connecting said sash frame to a jamb of said window frame for hinging movement between a closed and an open position and to provide an egress opening when said sash is in the open

position substantially equal to the space defined by said header and jambs of said window frame;

(d) a window operating control mounted centrally of said sill of said window frame;

5 (e) means providing a connection between said window operating control and said sash frame whereby movement of said operating control operates said sash frame in the opening and closing movements; and

(f) a locking mechanism for locking said sash in the closed position.

10 19. A combination as claimed in claim 7 together with hinges for hinging said sash frame to a jamb of said window frame, an operator mechanism for connection between said window frame and said sash frame for opening and closing movement of said sash frame, and a locking mechanism for locking said sash frame in the closed position.

15 20. A hinge for a casement window comprising a pair of members formed from a stamping each member having a mounting foot, a spacing arm projecting right angularly from one edge of said mounting foot, and a hinge barrel carrying arm projecting right angularly from the end of said spacer arm in a direction opposite to said foot, said hinge barrel supporting arm being
20 rolled at its free end into a hinge barrel, the hinge barrel of one of said members having a retractable spring loaded pin therein to be urged into the hinge barrel of the other stamping member when said members are mounted with their hinge barrels in alignment to effect the hinging action.

21. A window operator for a casement window having a sash swingable in
25 a window frame, said operator comprising a mounting plate having a central opening, having an upturned forwardly canted collar at one side of said opening and a downturned rearwardly canted collar at the other side of said opening, said collars forming end mounts supporting a downwardly and

inwardly projecting worm gear, a shroud over said worm gear, an operator gear mounted on said plate to mesh with said worm gear, an operating arm attached to said operating gear, a wheel mounted at the end of said operating arm, a trackway for said wheel for mounting on the underside of a swingable sash with said wheel engaging in said trackway.

22. A window operator as claimed in claim 21 in which said stamping plate is formed for mounting of an operator gear on either side of said worm gear.

23. A window operator as claimed in claim 20 or 21 in which said operator arm is formed of connectable lengths to enable extension of said arm.

24. A lock mechanism for a casement window having a sash comprising a latch bar for slideably mounting on the jamb of a window frame having a sash hinged to the opposite window frame jamb, said latch bar having elongated stud receiving slots and an upwardly projecting arm connected at its base to said bar to form an upwardly facing hook, and a control mechanism for operating said bar for longitudinal sliding movement.

25. A lock mechanism as claimed in claim 24 in which said control means comprises a control lever connected to operate a link extended through an opening in a window frame jamb.

26. A lock mechanism as claimed in claim 24 in which said control comprises a housing for mounting on a window frame jamb, a crank member having a rounded bearing hub extending into said housing, an operating handle secured to said hub located outside said housing, a crank arm connected to said hub and having a projecting operating pin located in said housing and a link to be extended through a slot in a window frame jamb comprising a body portion to be attached to the lower end of said bar and a slotted arm for engaging said pin on opposite sides thereof whereby movement of said crank arm pin in said slotted link arm effects upward and downward movement of said link and bar, said link arm having a restriction at

the entrance to said slot to provide a snap sound and fed at fully closed and opened positions of said locking mechanism.